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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,340	03/29/2001	Yoriaki Matsuzaki	018793-243	8537

7590

01/16/2003

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 01/16/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/806,340

Applicant(s)

MATSUZAKI ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- Th MAILING DATE of this communication appears on th cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,11,14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,11,14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. All outstanding rejections and objections are overcome by applicants' amendment filed 10/28/02.

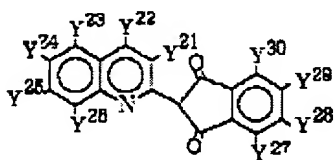
The following action is non-final, however, in light of the use of the English translation of JP 1113100, which was not previously available, against the present claims.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11131000.

JP 11131000, an English translation of which is included with this office action, discloses ink jet ink comprising water, resin, and quinophthalone compound of the formula:



wherein Y^{21} is hydroxyl group, Y^{23} , Y^{25} , Y^{22} , Y^{30} , Y^{27} , and Y^{28} are each hydrogen, Y^{24} and Y^{26} are each hydrogen or C_1 - C_{20} alkyl group, and Y^{29} is dialkylaminocarbonyl group such as dioctylaminocarbonyl (abstract, paragraphs 17, 18 (lines 3 and 11-12), 20, 24 (lines 1-5), and paragraph 37 (lines 10-11)).

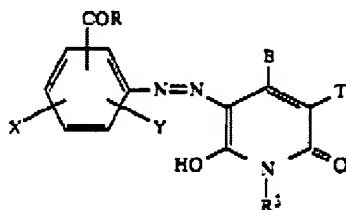
In light of the above, it is clear that JP 11131000 anticipate the present claims.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leoffler (U.S. 4,514,226).

Leoffler discloses pyridone azo compound of the formula:



where B is C₁-C₃ alkyl, T is cyano, R³ is C₁-C¹⁸ alkyl group, R is NR¹R² where R¹ and R² are each C₁-C₁₈ alkyl group, and X and Y are each hydrogen or halogen (col.1, lines 4-39).

It is noted that substituent B, which corresponds to presently claimed R₁₂, is C₃ alkyl group, i.e. propyl group, while present claim 11 requires C₄ alkyl, i.e. butyl group.

However, propyl and butyl are homologs-compounds differing regularly by the successive addition of the same chemical groups, in the present instance, alkyl groups, and the courts have held, as found in *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977), that compounds which are homologs are “generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties”. In light of the

cited case law, it therefore would have been obvious to one of ordinary skill in the art that colorant disclosed in the present claims is but an obvious variant of the colorant disclosed in Leoffler, and thus, one of ordinary skill in the art would have arrived at the claimed invention.

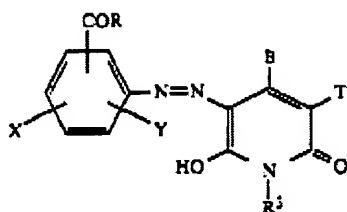
6. Claims 1, 6, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsutsumi et al. (U.S. 6,031,019) or Komatsu et al. (U.S. 6,379,443) either of which in view of Leoffler (U.S. 4,514,226).

Tsutsumi et al. disclose a water-based ink jet ink wherein the ink comprises polymer particles colored with oil-soluble dye. There is also disclosed a method for making the colored particles wherein the polymer, dye, and solvent are added to water and then emulsified. The colored polymer particles are dispersed in the water medium (col.1, lines 14-24, col.3, line 65-col.4, line 17, col.4, lines 21 and 49-51, col.6, lines 54-56, col.8, lines 11-12, col.11, lines 56-60, and col.12, lines 61-67).

Alternatively, Komatsu et al. disclose water-based ink jet ink comprising colored polymer comprising polymer and oil-soluble dye in the form of an emulsion wherein the colored polymer is dispersed in the water medium (col.7, lines 43-61, col.8, lines 32-35, and example A5).

The difference between Tsutsumi et al. or Komatsu et al. and the present claimed invention is the requirement in the claims of specific type of dye.

Leoffler discloses pyridone azo compound of the formula:



where B is C₁-C₃ alkyl, T is cyano, R³ is C₁-C¹⁸ alkyl group, R is NR¹R² where R¹ and R² are each C₁-C₁₈ alkyl group, and X and Y are each hydrogen or halogen (col.1, lines 4-39) wherein such dye possesses good lightfastness (col.5, lines 50-52).

It is noted that substituent B, which corresponds to presently claimed R₁₂, is C₃ alkyl group, i.e. propyl group, while present claims require C₄ alkyl, i.e. butyl group.

However, propyl and butyl are homologs-compounds differing regularly by the successive addition of the same chemical groups, in the present instance, alkyl groups, and the courts have held, as found in *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977), that compounds which are homologs are “generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties”. In light of the cited case law, it therefore would have been obvious to one of ordinary skill in the art that colorant disclosed in the present claims is but an obvious variant of the colorant disclosed in Leoffler.

In light of the motivation for using specific type of dye disclosed by Leoffler as described above, it therefore would have been obvious to one of ordinary skill in the art to use such dye in the ink jet ink of either Tsutsumi et al. or Komatsu et al. in order to produce a ink with good lightfastness, and thereby arrive at the claimed invention.

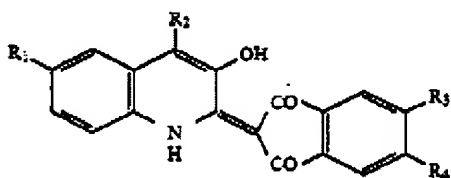
7. Claims 1-2 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsutsumi et al. (U.S. 6,031,019) or Komatsu et al. (U.S. 6,379,443) either of which in view of Ohyama et al. (U.S. 5,359,075).

Tsutsumi et al. disclose a water-based ink jet ink wherein the ink comprises polymer particles colored with oil-soluble dye. There is also disclosed a method for making the colored particles wherein the polymer, dye, and solvent are added to water and then emulsified. The colored polymer are dispersed in the water medium (col.1, lines 14-24, col.3, line 65-col.4, line 17, col.4, lines 21 and 49-51, col.6, lines 54-56, col.8, lines 11-12, col.11, lines 56-60, and col.12, lines 61-67).

Alternatively, Komatsu et al. disclose water-based ink jet ink comprising colored polymer comprising polymer and oil-soluble dye in the form of an emulsion wherein the colored polymer is dispersed in the water medium (col.7, lines 43-61, col.8, lines 32-35, and example A5).

The difference between Tsutsumi et al. or Komatsu et al. and the present claimed invention is the requirement in the claims of specific type of dye.

Ohyama et al. disclose quinophthalone compound of the formula:



where R₁ is hydrogen or C₁-C₈ alkyl group, R₂ is hydrogen, R₃ dialkylaminocarbonyl such as dipentylaminocarbonyl, and R₄ is hydrogen (col.2, lines 1-27 and col.2, line 54-col.3, line 36).

The motivation for using such dye is that it is stable to heat, light, humidity, and chemicals and has an excellent shelf-stability (col.5, line 66-col.6, line 3).

In light of the motivation for using specific type of dye disclosed by Ohyama et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such dye in the ink jet ink of either Tsutsumi et al. or Komatsu et al. in order to produce a storage stable ink with good resistance to heat, light, humidity, and chemicals, and thereby arrive at the claimed invention.

Response to Arguments

8. Applicants arguments regarding JP 06009891, JP 08034933, and JP 06059510 have been fully considered but they are moot in view of the discontinuation of these references against the present claims.

9. Applicants' arguments filed 10/28/02 have been fully considered but they are not persuasive.

Specifically, applicants argue:

- (a) Leoffler fails to disclose presently claimed compound (2), pyridone azo compound.
- (b) JP 11131000 does not disclose claimed compound (1), quinophthalone compound.
- (c) Ohyama et al. does not disclose claimed compound (1), quinophthalone compound.

With respect to argument (a), applicants argue that Leoffler fails to disclose pyridone azo compound wherein presently claimed substituent R_{12} represents alkyl groups having 4 or more carbon atoms.

It is agreed that Leoffler discloses pyridone azo compound wherein substituent B, which corresponds to presently claimed R_{12} , is C_3 alkyl group, i.e. propyl group, while present claims require C_4 alkyl, i.e. butyl group.

However, propyl and butyl are homologs-compounds differing regularly by the successive addition of the same chemical groups, in the present instance, alkyl groups, and the courts have held, as found in *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977), that compounds which are homologs are “generally of sufficient close structural similarity that there is a presumed expectation that such compounds possess similar properties”. in light of the cited case law, it therefore would have been obvious to one of ordinary skill in the art that colorant disclosed in the present claims is but an obvious variant of the colorant disclosed in Leoffler, and thereby one of ordinary skill in the art would have arrived at the claimed invention.

With respect to argument (b), applicants argue that JP 11131000 does not disclose quinophthalone wherein substituent R_3 is $-\text{CONR}_4\text{R}_5$ wherein each of R_4 and R_5 is an alkyl group having 6 or more carbon atoms as presently claimed.

However, paragraph 37, lines 10-11 of the English translation of JP 1113100 disclose that Y^{29} , which corresponds to presently claimed R_3 , is in fact $-\text{CONR}_4\text{R}_5$ or dialkylaminocarbonyl such as dioctylaminocarbonyl as presently claimed.

Further, applicants argue that JP 11131000 does not disclose presently claimed compound given that the nitrogen atom in presently claimed formula (1) is bonded to hydrogen atom and the bicyclic structures are bonded by a double bond while in the compound of JP 1113100, the nitrogen atom is not bonded to a hydrogen atom, and the bicyclic structures are bonded by a single bond.

However, it is examiner's position that the quinophthalone compound disclosed by JP 1113100 and that presently claimed represent tautomeric forms of the same compound which implies their equivalence. Evidence to support this position is found in col.2, lines 29-45 of Ohyama et al. which disclose that quinophthalone does "tautomer exist" and that the two tautomeric forms are equivalent.

With respect to argument (c), applicants argue that Ohyama et al. do not disclose quinophthalone where substituent R_3 is $-\text{CONR}_4\text{R}_5$ and each of R_4 and R_5 is an alkyl group having 6 or more carbon atoms as presently claimed.

However, col.3, lines 26-36 of Ohyama et al. disclose that R_3 is in fact dialkylaminocarbonyl group including dipentylaminocarbonyl group identical to that presently claimed.

With respect to the combination of either Tsutsumi et al. or Komatsu et al. with Ohyama et al., applicants argue that the combination fails to recognize the advantages, as set forth in the present specification, of using presently claimed compound (1) in inks.

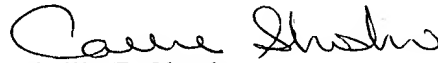
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However, given that Ohyama et al. disclose compound identical to that presently claimed, it is clear that the inks of Tsutsumi et al. and Komatsu et al. would intrinsically possess the same advantages as the inks set forth in the present invention.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Callie E. Shosho
Examiner
Art Unit 1714

CS
January 11, 2003